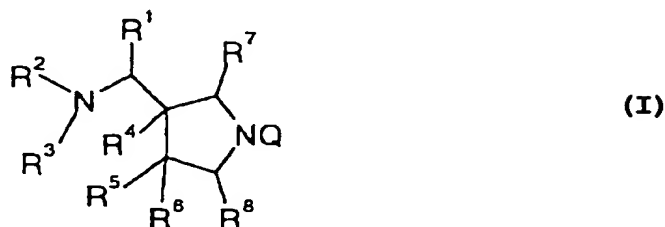


# CLAIM

1. A compound represented by the following formula (I), its salts or hydrates thereof



(wherein R<sup>1</sup> represents an aryl group having from 6 to 10 carbon atoms or a heteroaryl group,

wherein the heteroaryl group may be a five-membered ring or a six-membered ring and may contain from 1 to 4 hetero atoms optionally selected from nitrogen atom, oxygen atom and sulfur atom,

wherein the aryl group and heteroaryl group may have one or more substituents selected from the group consisting of a halogen atom, hydroxyl group, thiol group, amino group, nitro group, cyano group, carboxyl group, carbamoyl group, phenyl group, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 6 carbon atoms, an acyl group having from 2 to 5 carbon atoms and a heteroaryl group (a five-membered ring or six-membered ring containing from 1 to 4 hetero atoms optionally selected from nitrogen atom, oxygen atom and sulfur atom),

wherein the alkyl group, alkoxy group, alkylthio group,

alkoxycarbonyl group, acyl group, phenyl group and heteroaryl group among them may have one or more substituents selected from the group consisting of a halogen atom, hydroxyl group, an alkoxyl group having from 1 to 6 carbon atoms and an alkylthio group having from 1 to 6 carbon atoms, and

the amino group may have one or two substituents selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms;

$R^2$  and  $R^3$  each independently represents hydrogen atom or an alkyl group having from 1 to 6 carbon atoms,

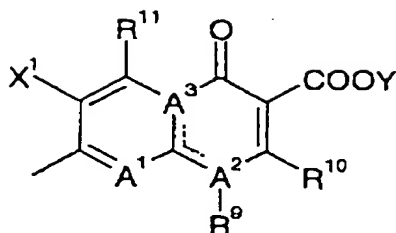
wherein the alkyl group may have one or more substituents selected from the group consisting of hydroxyl group, a halogen atom, an alkylthio group having from 1 to 6 carbon atoms and an alkoxyl group having from 1 to 6 carbon atoms;

$R^4$ ,  $R^5$  and  $R^6$  each independently represents hydrogen atom, hydroxyl group, a halogen atom, carbamoyl group, an alkyl group having from 1 to 6 carbon atoms, an alkoxyl group having from 1 to 6 carbon atoms or an alkylthio group having from 1 to 6 carbon atoms,

wherein the alkyl group among them may have one or more substituents selected from the group consisting of hydroxyl group, a halogen atom and an alkoxyl group having from 1 to 6 carbon atoms, as substituents;

$R^7$  and  $R^8$  each independently represents hydrogen atom or an alkyl group having from 1 to 6 carbon atoms;

$Q$  represents a partial structure represented by the following formula



[wherein R<sup>9</sup> represents an alkyl group having from 1 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, a halogenoalkyl group having from 1 to 6 carbon atoms, a cyclic alkyl group having from 3 to 6 carbon atoms which may have a substituent, an aryl group which may have a substituent, a heteroaryl group which may have a substituent, an alkoxy group having from 1 to 6 carbon atoms or an alkylamino group having from 1 to 6 carbon atoms,

R<sup>10</sup> represents hydrogen atom or an alkylthio group having 1 to 6 carbon atoms,

wherein R<sup>10</sup> and the aforementioned R<sup>9</sup> may be integrated to form a ring structure by incorporating a part of the mother skeleton, and the thus formed ring may contain sulfur atom as a ring-constituent atom, and the ring may also have an alkyl group having from 1 to 6 carbon atoms as a substituent,

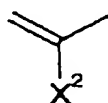
R<sup>11</sup> represents hydrogen atom, amino group, hydroxyl group, thiol group, a halogenomethyl group, an alkyl group having from 1 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, an alkynyl group having from 2 to 6 carbon atoms or an alkoxy group having 1 to 6 carbon atoms,

wherein the amino group may have one or two substituents selected

from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms and an acyl group having from 2 to 6 carbon atoms, when  $R^{11}$  is amino group, hydroxyl group or thiol group, they may be protected with a protective group;

$X^1$  represents a halogen atom or hydrogen atom,

$A^1$  represents nitrogen atom or a partial structure represented by the following formula (II)



(II)

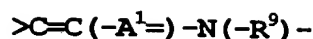
(wherein  $X^2$  represents hydrogen atom, amino group, a halogen atom, a cyano group, a halogenomethyl group, a halogenomethoxyl group, an alkyl group having from 1 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, an alkynyl group having from 2 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms,

wherein the amino group among them may have one or two substituents selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms and an acyl group having from 2 to 5 carbon atoms, and

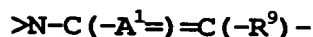
$X^2$  and the aforementioned  $R^9$  may be integrated to form a ring structure by incorporating a part of the mother skeleton, and the thus formed ring may contain oxygen atom, nitrogen atom or sulfur atom as a ring-constituent atom, and the ring may also have an alkyl group having from 1 to 6 carbon atoms as a substituent),

$A^2$  and  $A^3$  each independently represents nitrogen atom or carbon atom, and  $A^2$  and  $A^3$  and the carbon atom, to which they are bonded, form a

partial structure



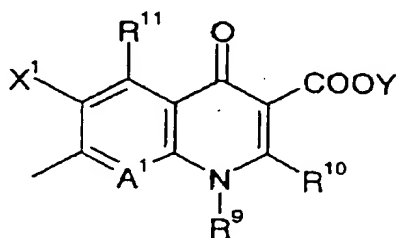
or a partial structure



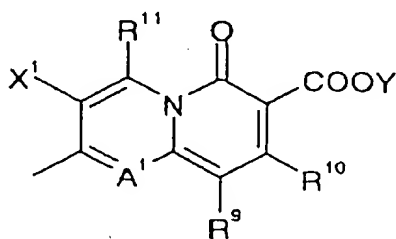
and

Y represents hydrogen atom, phenyl group, acetoxymethyl group, pivaloyloxymethyl group, ethoxycarbonyl group, choline group, dimethylaminoethyl group, 5-indanyl group, phthalidiny group, a 5-alkyl-2-oxo-1,3-dioxol-4-ylmethyl group, 3-acetoxy-2-oxobutyl group, an alkyl group having from 1 to 6 carbon atoms, an alkoxymethyl group having from 2 to 7 carbon atoms or a phenylalkyl group composed of an alkylene group having from 1 to 6 carbon atoms and phenyl group] ).

2. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) has a structure represented by the following formula

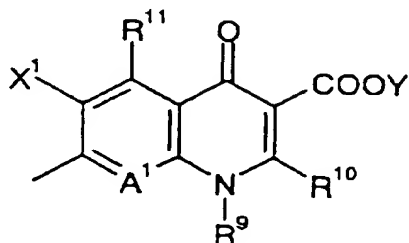


or the following formula



(wherein A<sup>1</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, X<sup>1</sup> and Y are as defined in the foregoing).

3. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) has a structure represented by the following formula



(wherein A<sup>1</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, X<sup>1</sup> and Y are as defined in the foregoing).

4. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 6-carboxy-9-fluoro-2,3-dihydro-3-(S)-methyl-7-oxo-7H-pyrido[1,2,3-de][1.4]benzoxazin-10-yl group.

5. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 8-amino-6-carboxy-9-fluoro-2,3-dihydro-3-(S)-methyl-7-oxo-7H-pyrido[1,2,3-de][1.4]benzoxazin-10-yl group.

6. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-6-fluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-1,4-dihydro-4-oxo-1,8-naphthyridin-7-yl group.

7. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-8-chloro-6-fluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-1,4-dihydro-4-oxoquinolin-7-yl

group.

8. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-6-fluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-8-methoxy-1,4-dihydro-4-oxoquinolin-7-yl group.

9. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-8-methoxy-1,4-dihydro-4-oxoquinolin-7-yl group.

10. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-6-fluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-8-difluoromethoxy-1,4-dihydro-4-oxoquinolin-7-yl group.

11. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-8-difluoromethoxy-1,4-dihydro-4-oxoquinolin-7-yl group.

12. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 3-carboxy-6-fluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-8-methyl-1,4-dihydro-4-oxoquinolin-7-yl group.

13. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 5-amino-3-carboxy-6-fluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-8-methoxy-1,4-dihydro-4-oxoquinolin-7-yl group.

14. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 5-amino-3-carboxy-6-fluoro-1-

[2-(S)-fluoro-1-(R)-cyclopropyl]-8-methyl-1,4-dihydro-4-oxoquinolin-7-yl group.

15. The compound according to claim 1, its salts or hydrates thereof, wherein Q in the formula (I) is 5-amino-3-carboxy-6,8-difluoro-1-[2-(S)-fluoro-1-(R)-cyclopropyl]-1,4-dihydro-4-oxoquinolin-7-yl group.

16. The compound according to any one of claims 1 to 15, its salts or hydrates thereof, wherein R<sup>1</sup> in the formula (I) is an aryl group having from 6 to 10 carbon atoms which may have a substituent.

17. The compound according to claim 16, its salts or hydrates thereof, wherein R<sup>1</sup> in the formula (I) is an aryl group having from 6 to 10 carbon atoms which may have a substituent, and its aryl group moiety is phenyl group or naphthyl group.

18. The compound according to any one of claims 1 to 15, its salts or hydrates thereof, wherein R<sup>1</sup> in the formula (I) is a heteroaryl group which may have a substituent.

19. The compound according to claim 18, its salts or hydrates thereof, wherein R<sup>1</sup> in the formula (I) is a heteroaryl group which may have a substituent, and its heteroaryl group moiety is furyl group, thienyl group, pyrrolyl group, oxazolyl group, isoxazolyl group, thiazolyl group, isothiazolyl group, imidazolyl group, pyrazolyl group, furazanyl group, pyridyl group, pyrazinyl group, pyrimidyl group, pyridazinyl group, triazinyl group or tetrazinyl group.

20. The compound according to any one of claims 1 to 19, its salts or hydrates thereof, wherein the compound of formula (I) is a stereochemically pure compound.



21. The compound according to claim 1, 2, 3, 16, 17, 18 or 19, its salts or hydrates thereof, wherein R<sup>9</sup> is a cyclopropyl group having a halogen atom as a substituent.

22. The compound according to claim 21, its salts or hydrates thereof, wherein the cyclopropyl group having a halogen atom as a substituent is a 1,2-cis-halogenocyclopropyl group.

23. The compound according to claim 22, its salts or hydrates thereof, wherein the cyclopropyl group having a halogen atom as a substituent is a stereochemically pure substituent.

24. The compound according to claim 23, its salts or hydrates thereof, wherein the cyclopropyl group having a halogen atom as a substituent is a (1R,2S)-2-halogenocyclopropyl group.

25. The compound according to claim 24, its salts or hydrates thereof, wherein halogen atom of the cyclopropyl group having a halogen atom as a substituent is fluorine atom.

26. The compound according to any one of claims 1 to 25, its salts or hydrates thereof, wherein each of R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> is hydrogen atom.

27. The compound according to claim 26, its salts or hydrates thereof, wherein R<sup>1</sup> is an aryl group having from 6 to 10 carbon atoms which may have a substituent, or a heteroaryl group of five-membered ring or six-membered ring which contains from 1 to 4 hetero atoms optionally selected from nitrogen atom, oxygen atom and sulfur atom and may have a substituent.

28. A medicament which comprises the compound described in any one of claims 1 to 28, its salts or hydrates thereof, as an active

ingredient.

29. An antibacterial agent which comprises the compound described in any one of claims 1 to 28, its salts or hydrates thereof, as an active ingredient.

30. A therapeutic agent for an infectious disease, which comprises the compound described in any one of claims 1 to 28, its salts or hydrates thereof, as an active ingredient.

31. A method for treating a disease, which comprises administering the compound described in any one of claims 1 to 28, its salts or hydrates thereof.

32. A method for treating an infectious disease, which comprises administering the compound described in any one of claims 1 to 28, its salts or hydrates thereof.

33. A method for producing a medicament, which comprises formulating the compound described in any one of claims 1 to 28, its salts or hydrates thereof, as an active ingredient.

34. A method for producing an antibacterial agent, which comprises formulating the compound described in any one of claims 1 to 28, its salts or hydrates thereof, as an active ingredient.

35. A method for producing an infectious disease treating agent, which comprises formulating the compound described in any one of claims 1 to 28, its salts or hydrates thereof, as an active ingredient.

36. Use of the compound described in any one of claims 1 to 28, its salts or hydrates thereof for the production of a medicament.

37. Use of the compound described in any one of claims 1 to 28, its salts or hydrates thereof for the production of an antibacterial

agent.

38. Use of the compound described in any one of claims 1 to 28, its salts or hydrates thereof for the production of an infectious disease treating agent.

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